

### **Remarks/Arguments**

The foregoing amendments to the claims are of formal nature, and do not add new matter. Claims 119-138 are pending in this application and are rejected/objected to on various grounds. Claims 139-142 have been added, support for which is found in canceled claim 132 and in the instant specification at page 285, line 11 onwards. Entry of these claims is respectfully requested. Claims 127-128, 132-134 have been canceled without prejudice or disclaimer to claim its subject matter in subsequent continuation or divisional applications. Accordingly, Claims 119-126, 129-131, 135-142 are now pending in this application. Claims 119-128 have been amended for clarity to particularly claim what the Applicants consider is their invention and with the recitation "wherein said nucleic acid is amplified in colon tumors," support for which is found in Example 170 of the instant specification. The rejections to the presently pending claims are respectfully traversed.

### **Information Disclosure Statement**

Applicants submit an IDS separately enlisting references recited in the Blast report filed 3/25/2002 in order to be compliant with 37 C.F.R. § 1.98(a)(1). Consideration of this Information Disclosure Statement is respectfully requested.

### **Specification**

The disclosure was objected to by the Examiner as containing "embedded hyperlink and/or other form of browser-executable code." The foregoing amendment to the specification which deleted all embedded hyperlinks, is believed to overcome the present objections.

Accordingly, Applicants believe that all objections to the specification has been overcome.

### **Claim Rejections – 35 U.S.C. §112, First Paragraph- Enablement**

Claim 131 is rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, to make and/or use the invention. The Examiner says that the deposit under ATCC 209977 must be obtainable by a repeatable method set forth in the specification or otherwise should be readily available to the public. Further, Claims 119-1128 and 132-138 are rejected under 35 U.S.C. §112, first paragraph, allegedly because the specification does not

reasonably provide enablement for any variants. While the Examiner acknowledges that the specification provides an enabling disclosure for SEQ ID NO: 193 or the cDNA of properly deposited ATCC 209977 as probes in cancer diagnosis, it is asserted that variants or fragments of such sequences are not enabled. The Examiner quotes exemplary references like Pennica *et al.*, Konopka *et al.* and Haynes *et al.* to conclude that "it does not necessarily follow that an increase in gene copy numbers results in increased gene expression and increased polypeptide expression." For the reasons outlined below, Applicants respectfully traverse.

Initially, Applicants submit that amendments to the specification have (1) incorporated the requisite assurances that "all restrictions imposed by the depositor on the availability to the public of the deposited material will be irrevocably removed upon the granting of the pertinent U.S. patent." Further, the instant specification has the current ATCC address. Thus, this rejection should be withdrawn.

Further, the cancellation of claims 127-128 and 132-134 without prejudice or disclaimer, renders this rejection moot to these claims. Further, without acquiescing to the propriety of this rejection, Applicants have amended Claims 119-123 to recite a functional recitation: "wherein said nucleic acid is amplified in colon tumors."

In addition, Applicants entirely disagree with the Examiner's conclusion that "increases in gene copy number do not reliably correlate with increased gene expression or polypeptide expression" but, for the sake of brevity, since "gene expression or polypeptide expression" has no bearing on the instant claims, do not discuss this point further. Instead, Applicants respectfully point out that the instantly amended claims are directed to naturally occurring **nucleic acids** encoding PRO1009 that are amplified in colon cancers, and not to polypeptides or products of gene expression. Hence, in this instance, this rejection which addresses gene/ polypeptide expression based on the teachings of Pennica *et al.*, Konopka *et al.*, and Haynes *et al.*, is improper. Based on the instant disclosure, which details how to make and use nucleic acid variants (see pages 308-311), and the advanced knowledge in the art at the time of filing, one skilled in the art would know exactly what nucleic acid variants the instant claims encompass and would know how to make and use these nucleic acids for the diagnosis of colon cancers

without undue experimentation; for example, by using diagnostic methods based on hybridization to such amplified sequences.

Thus, Applicants believe that these rejections under 35 U.S.C. §112, first paragraph, should be withdrawn.

#### **Claim Rejections – 35 U.S.C. §112, First Paragraph - Written Description**

Claims 119-128 and 132-138 are rejected under 35 U.S.C. §112, first paragraph, for failing to comply with the written description requirement. The Examiner contends that "the claims contain subject matter not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." Applicants respectfully traverse this rejection to the pending claims.

#### **The Legal standard for Written Description**

The well- established test for sufficiency of support under the written description requirement of 35 U.S.C. §112, first paragraph, is whether the disclosure "reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter." *In re Kaslow*, 707 F.2d 1366, 1375, 212 USPQ 1089, 1096 (Fed. Cir. 1983); see also *Vas-Cath, Inc. v. Mahurkar*, 935 F. 2d at 1563, 19 USPQ2d at 1116 (Fed. cir. 1991). The adequacy of written description support is a factual issue and is to be determined on a case-by-case basis. see e.g., *Vas-Cath, Inc. v. Mahurkar*, 935 F. 2d at 1563, 19 USPQ2d at 1116 (Fed. cir. 1991). The factual determination in a written description analysis depends on the nature of the invention and the amount of knowledge imparted to those skilled in the art by the disclosure. *Union Oil v. Atlantic Richfield Co.*, 208 F. 3d 989, 996 (Fed. Cir. 2000).

#### **Arguments**

As noted above, whether the Applicants were in possession of the invention as of the effective filing date of an application is a factual determination, reached by the consideration of a number of factors, including the level of knowledge and skill in the art, and the teaching provided by the specification. The inventor is not required to describe every single detail of

his/her invention. An Applicant's disclosure obligation varies according to the art to which the invention pertains.

The present invention pertains to the field of recombinant DNA/protein technology. It is well established that the level of skill in this field is very high since a representative person of skill is generally a Ph.D. scientist with several years of experience. Accordingly, the teaching imparted in the specification must be evaluated through the eyes of a highly skilled artisan as of the date the invention was made. The instant invention, defined by the claims, concerns polypeptides having 80%, 85%, 90%, 95% or 99% sequence identity with the disclosed polypeptide sequence SEQ ID NO: 194 and further, with the functional recitation: "wherein the nucleic acid encoding said polypeptide is amplified in colon tumors." Based on the detailed description of the cloning and expression of variants of PRO1009 in the specification, the description of the gene amplification assay and description of testing the ability of test variant polypeptides in the assay, the actual reduction to practice of sequences SEQ ID NO: 194 and 193 and the functional recitation in the instant claims, Applicants submit that one of skilled in the art would know that Applicants possessed the invention as claimed in the instant claims.

Hence, Applicants submit that this rejection should be withdrawn.

**Claim Rejections – 35 U.S.C. §112, Second Paragraph**

Claims 119-124, 127, 128, 130 and 131 were rejected under 35 U.S.C. §112, second paragraph, for being indefinite. The Examiner asserts that "the protein identified as PRO1009 has multiple transmembrane domains, which would result in multiple extracellular domains. Therefore, it is unclear what is meant by "the extracellular domain" in the claims." Further, the recitation 'the extracellular domain....lacking its associated signal sequence' was also deemed indefinite.

Without acquiescing to the propriety of this rejection, Applicants have canceled references to "the extracellular domain" and "the extracellular domain....lacking its associated signal sequence" in the pending claims. Accordingly, this rejection should be withdrawn.

### **Priority**

Applicants submit that they rely on the gene amplification assay for patentable utility which was first disclosed in U.S. Provisional Application 60/141,037, filed June 23, 1999, priority to which has been claimed in this application. Based on the discussions above under the 101/112, first paragraph utility, and based on the disclosure of SEQ ID NO: 36 (that encodes PRO1009) in Application 60/141,037, Applicants believe that the application provides adequate support and that meets the requirements of 35 USC § 101 and 112, first paragraph. Hence, Applicants should be entitled to at least an effective filing date of **June 23, 1999**.

### **Claim Rejections – 35 U.S.C. §102(b)**

Claims 132-134 are rejected under 35 U.S.C. §102(b) as being anticipated by Zenno *et al.* (U.S.P.N. 5,618,722, dated 1997).

As Claims 132-134 have been canceled and the new Claims 139-145 recite hybridization under high stringency conditions and additionally, a length of "at least 20 nucleotides", Applicants submit that Zenno does not read on the instant claims and hence request that this rejection be withdrawn.

### **Claim Objections**

Claims 129 and 130 are objected to as being dependent upon a rejected base claim.

Based on the current claim amendments and discussions above, Applicants believe that Claim 124 upon which Claims 129 and 130 depend, is allowable. Hence this objection should be withdrawn.

The present application is believed to be in *prima facie* condition for allowance, and an early action to that effect is respectfully solicited.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. **08-1641**, referencing Attorney's Docket No. **39780-2730 P1C53**.

Please direct any calls in connection with this application to the undersigned at the number provided below.

Respectfully submitted,

Date: June 22, 2004

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